

IN THE CLAIMS:

The text of all pending claims is set forth below. Please AMEND claims 1-3, 5, 8-10, 12, 14-15, 17-18, 35, and 39, Please ADD claims 41-43 and please CANCEL claims 16 and 40 in accordance with the following:

1. (CURRENTLY AMENDED) A burst error correction method in an HD-DVD having data groups encoded therein, adding an inner parity (PI) of e bytes per x segment and an outer parity (PO) of f bytes to an error correction block having a size of n bytes in a row direction ~~x~~ (m X o) bytes in a column direction, the error correction method comprising:

obtaining a plurality of ~~inner parity blocks (PI blocks)~~ PI blocks by segmenting the error correction block in ~~an inner parity (PI)~~ a PI direction into x segments, wherein x is an integer equal to or greater than 2;

~~generating e byte PI for each of the plurality of PI blocks generated by segmenting, and adding the PIs in the PI direction;~~

~~generating f byte outer parity (PO) in a PO direction of the error correction block having PIs, and adding the POs in the PO direction; and~~

~~interleaving a plurality of data groups and the plurality of PIs in the PI direction in the error correction blocks having PIs and POs~~

providing the PO of f bytes to a PO direction of the error correction block;

providing the PI of e bytes for each of the plurality of PI blocks to the PI direction of the error correction block, wherein

f, which is a number of PO direction parities, and x, which is a number of PI direction segments, are provided so that a result of multiplication of x with f is divided by o, which is a number of data frames in the error correction block, without a remainder, and a recording frame is formable where f is not equal to o.

2. (CURRENTLY AMENDED) The error correction method of claim 1, wherein the PIs are Reed-Solomon codes and satisfy $(n/x) + e \leq \lceil \frac{n}{x} \rceil + 256$.

3. (CURRENTLY AMENDED) The error correction method of claim 2, wherein ~~(n+e)~~ x(m+f) user data of the error correction block is less than or equal to 64K.

4. (ORIGINAL) The error correction method of claim 3, wherein n is 688 and m is 96.
5. (CURRENTLY AMENDED) The error correction method of claim 4, wherein x is ~~172~~4 and e is 8.
6. (ORIGINAL) The error correction method of claim 5, wherein f is 12.
7. (CANCELLED)
8. (CURRENTLY AMENDED) The error correction method of claim ~~4~~1, wherein the interleaving further comprises:
gathering bytes having the same order in each of the data groups; and
allocating the gathered bytes sequentially according to their order.
9. (CURRENTLY AMENDED) The error correction method of claim ~~8~~10, wherein the reallocating is performed in ~~the~~ PI groups in a single data row.
10. (CURRENTLY AMENDED) The error correction method of claim ~~4~~1, wherein the interleaving further comprises reallocating ~~a plurality of~~the PIs (PI0, PI1, ..., PIn/x) by gathering bytes having ~~a~~the same order in bytes included in each of the plurality of PIs, thereby forming reallocated PI groups.
11. (ORIGINAL) The error correction method of claim 10, wherein the reallocating is performed in the PIs in a single data row.
12. (CURRENTLY AMENDED) The error correction method of claim 10, further comprising:
moving and allocating the reallocated PIs between the reallocated PIs groups.
13. (ORIGINAL) The error correction method of claim 11, further comprising:
interleaving the POs in the PO direction.

14. (CURRENTLY AMENDED) The error correction method of claim 13, wherein the PO direction interleaving further comprises:

obtaining an $n \times X$ f bytes bit stream by lining up the ~~f-byte POs~~ PO of f bytes sequentially, and forming a divided PO by dividing the bit stream into each $\{(n \times X f)/m\}$; and moving and allocating the divided PO in the PO direction in each row.

15. (CURRENTLY AMENDED) The error correction method of claim 4, wherein $n \times X$ m is a basic address unit recorded on the HD-DVD, the method further comprising:

dividing the error correction block into a plurality of data frames, each of the data frames comprising a 4-byte ID, a 2-byte IED, an 18-byte RSV, two 2-KB user data blocks, and two 4-byte EDCs.

16. (CANCELLED)

17. (CURRENTLY AMENDED) The error correction method of claim ~~16~~ 1, wherein $(n/x) + e \leq \lceil \lceil \geq \rceil \rceil 256$ so that an operation in a Galois Field is performed.

18. (CURRENTLY AMENDED) The error correction method of claim 8, wherein the reallocating is performed in ~~the~~ PI groups in a plurality of data rows.

19-34. (CANCELLED)

35. (CURRENTLY AMENDED) An error correction method adding an inner parity (PI) of e bytes per x segment and an outer parity (PO) of f bytes to an error correction block having a size of n bytes in a row direction $\times X$ (m X o) bytes in a column direction, the error correction method comprising:

obtaining a plurality of ~~inner parity blocks (PI blocks)~~ PI blocks by segmenting the error correction block in ~~an inner parity (PI)~~ a PI direction into x segments, wherein x is an integer equal to or greater than 2;

~~generating e-byte~~ providing the PI of e bytes for each of the plurality of PI blocks ~~generated by segmenting, and adding the PIs into~~ the PI direction of the error correction block;

~~generating f-byte outer parity (PO)~~ providing the PO of f bytes to a PO direction of the error correction block having PIs, and adding the POs in the PO direction; and

interleaving a plurality of data groups of the error correction block and the plurality of PIs in the PI direction in the error correction blocks having the PIs and POs,
wherein the interleaving further comprises reallocating ~~a plurality of the~~ PIs (PI0, PI1, ..., PIn/x) by gathering bytes having a the same order in bytes included in each of the plurality of PIs, thereby forming reallocated PI groups.

36. (PREVIOUSLY PRESENTED) The error correction method of claim 35, wherein the reallocating is performed in the PIs in a single data row.

37. (PREVIOUSLY PRESENTED) The error correction method of claim 35, further comprising:
moving and allocating the reallocated PIs between the reallocated PIs groups.

38. (PREVIOUSLY PRESENTED) The error correction method of claim 36, further comprising:
interleaving the POs in the PO direction.

39. (CURRENTLY AMENDED) The error correction method of claim 38, wherein the PO direction interleaving further comprises:
obtaining an $n \times \underline{X} f$ bytes bit stream by lining up the ~~f-byte POs~~ PO of f bytes sequentially, and forming a divided PO by dividing the bit stream into each $\{(n \times \underline{X} f)/m\}$; and
moving and allocating the divided PO in the PO direction in each row.

40. (CANCELLED)

41. (NEW) The error correction method of claim 1, further comprising interleaving the plurality of data groups and the plurality of PIs in the PI direction in the error correction block having the PIs and POs.

42. (NEW) An error correction method comprising:
adding an outer parity (PO) of f bytes to an error correction block in a row direction, said error correction block having a size of n bytes in the row direction X (m X o) bytes in a column direction and segmentable into x segments;

adding an inner parity (PI) of e bytes per x segment to the error correction block in the column direction; and

segmenting the error correction block in the column direction into x segments, and interleaving a plurality of data groups of the error correction block and the plurality of PIs in the column direction, wherein x is an integer equal to or greater than 2, and f and x are provided so as to have $(x \times f)$ divided by o , which is a number of data frames in the error correction block, without a remainder.

43. (NEW) The error correction method of claim 42, further comprising:
interleaving in the row direction said interleaved POs and PIs; and
interleaving in the row direction said interleaved data groups and PIs.